The basic premise of the position paper is that the new breeding techniques reviewed to date are forms of genetic engineering, and as such are not compatible for use in organic systems. The paper includes an annex that lists the full spectrum of breeding techniques used both historically and currently, and assesses them for compatibility against organic principles and criteria as described in the main body of the paper. Some specific questions on certain techniques are left pending further evaluation.

Those who provided feedback on the first public consultation draft of the position paper mainly fall into two categories of stakeholders: (i) those from within the organic movement and who support the maximization of organically developed genetic resources; and (ii) the mainstream plant breeding sector, which favors the possible inclusion of certain new breeding techniques in organic production systems. A few commenters express sympathies with certain points from both of these categories.

Those respondents who are from “inside” the organic movement largely supported the position paper. They made some suggestions for improving wording and clarifying certain points and many of these were taken into the new version. There were some opposing suggestions for minor wording changes that did not effect a substantive change of meaning; in such cases, the Working Group chose what it felt was the better option among the existing text and the suggested alternative(s). In addition, several commenters from France advocated for more restrictions or prohibitions on certain techniques listed in the annex, some of which were incorporated, and some of which are currently indicated as still needing a final determination, as the Working Group believes more in-depth consideration is necessary; the intention is to continue those evaluations through multi-stakeholder engagement facilitated by the Working Group, pending a vote in favor of the upcoming General Assembly motion.

The commenters from the mainstream breeding sector mostly used common text in their respective comments, with most submissions from European seed and breeding organizations being largely verbatim commentary from one to the other. They raised inconsistencies in the logic expressed by the position paper, and offered their perspective on the potential impacts that assuming the position described in the paper would have on the organic sector commercially, legally, and developmentally. Some of these commenters (most notably from US, French, and Dutch organizations) offered additional detail about specific technical corrections in the draft paper and more elaborated opinions on specific aspects, as well as proactive offers to engage with the organic sector to explore possible areas for common ground and collaboration. IFOAM – Organics International appreciates the thoughtful critique and intends to follow up on all such offers in accordance with the guidance that will result from the General Assembly’s vote on the World Board’s motion regarding breeding techniques.

Commenters raised the following salient and interrelated issues, which the Working Group has addressed as described below:

**The process vs. the product of genetic engineering** – Arguments were made that in many cases genotypic changes created through new genetic engineering techniques contain no foreign DNA could not be differentiated from those that could occur spontaneously in nature. The argument continues that the engineering technique simply enables the creation “at will.” Proponents of this opinion claim that such new genotypes should thus be allowed in organic systems. Part of the rationale for this argument is the supposed relative exactitude of the changes wrought in the genome. The Working Group rejects this idea and insists on the process-based approach generally applied in Organic Regulations. Studies have already shown cases of multiple non-target mutations caused by single gene-editing events1. While greater analytical capability may indeed continue to help better discern differences between genomes (such as

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comparing natural reference organisms to novel creations), there are not yet adequate protocols to assure safety nor adequate understanding of the reproductive potentials or phenotypic expressions of genomes engineered through these new techniques. The Principle of Care mandates a more precautionary approach.

**The definition of Genetic Engineering** – Commenters in favor of these new techniques’ being deemed compatible with organic systems claim that existing legal definitions and associated regulations do not yet define the new techniques as forms of genetic engineering, and thus IFOAM – Organics International (or any other non-governmental organization) does not have the right to make such determinations or expect others to have to act in accordance with them. The Working Group takes a different approach. Key national regulators have yet to issue a final position on the status of gene editing and similar new breeding techniques. Statements from the German Federal Minister for Environment, Nature Conservation, Building and Nuclear Safety have been made to the effect that gene editing should be considered a form of genetic engineering. A high court decision in New Zealand ruled similarly in 2014, that these new techniques are a form of genetic engineering.

A significant reason that consumers choose organic goods is because organic production systems universally exclude the use of genetic engineering. It would be inappropriate for IFOAM – Organics International to accept gene editing and other newer forms of breeding as “non-GMO” techniques, especially if regulators determine otherwise. Furthermore, in light of the advent of this new wave of genetic manipulation techniques, the Working Group feels it is entirely appropriate to re-open the discussion around the definition of genetic engineering; IFOAM – Organics International aims to help facilitate this discussion at intergovernmental and national levels to modernize the thinking and regulations on this topic.

**A legacy of “inherited” altered genomes** – Commenters in favor of allowing the new techniques in organic systems have pointed out that the organic sector’s tolerance for organisms created in the past through chemically- or irradiation-induced mutagenesis is inconsistent with the criteria stated in the position paper. We acknowledge that this is an imperfect circumstance, but the Working Group sees this as a “legacy” issue, and quite separate to the issue of new genetic engineering techniques. To the best of its ability, the organic sector intends to identify and phase out seed produced by these chemically- or irradiation-induced techniques, as the sector seeks to achieve its ultimate mission of 100% use of organically produced seed.

**The availability of genetic resources going forward** – Mainstream seed companies have cautioned the organic sector that its insistence on excluding these new techniques will significantly diminish the availability of genetic resources that organic producers can use. There is no promise that conventional breeding companies will keep non-engineered strains separate, and thus no guarantees of purity or even availability of certain older varieties. We understand the potential seriousness of such limitations from agronomic as well as economic standpoints, and the need to significantly step up efforts to expand organically acceptable genetic resources and initiation of organic breeding initiatives. The organic market sector consistently shows stronger growth year on year than any other agricultural sector; it is thus an opportunity for collaboration between organic producers and breeders to develop new strains in a manner that is compatible with the expectations of organic producers and consumers. IFOAM – Organics International and its allies will continue to seek out such opportunities.

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2 [http://www.testbiotech.org/gentechnik-grenzen/reaktionen/antwort_bmub](http://www.testbiotech.org/gentechnik-grenzen/reaktionen/antwort_bmub)